



**University of
Zurich**^{UZH}

**Zurich Open Repository and
Archive**

University of Zurich
University Library
Strickhofstrasse 39
CH-8057 Zurich
www.zora.uzh.ch

Year: 2016

**Erratum: Low-mass dark matter search using ionization signals in
XENON100 [Phys. Rev. D 94, 092001 (2016)]**

XENON Collaboration ; Baudis, Laura ; Brown, Adam ; Capelli, Chiara ; Galloway, Michelle ; Kazama, Shingo ; Kish, Alexander ; Piastra, Francesco ; Reichard, Shayne ; Wulf, Julien ; et al

Abstract: In Fig. 5 of our original article, we compared measurements and predictions of the charge yield Q_y . In that figure, the LUX points were misrepresented, and therefore we present here in Fig. 1 the corrected points from Ref. [1].

DOI: <https://doi.org/10.1103/PhysRevD.95.059901>

Posted at the Zurich Open Repository and Archive, University of Zurich

ZORA URL: <https://doi.org/10.5167/uzh-148810>

Journal Article

Published Version

Originally published at:

XENON Collaboration; Baudis, Laura; Brown, Adam; Capelli, Chiara; Galloway, Michelle; Kazama, Shingo; Kish, Alexander; Piastra, Francesco; Reichard, Shayne; Wulf, Julien; et al (2016). Erratum: Low-mass dark matter search using ionization signals in XENON100 [Phys. Rev. D 94, 092001 (2016)]. Physical review D, D94(9):092001.

DOI: <https://doi.org/10.1103/PhysRevD.95.059901>

**Erratum: Low-mass dark matter search
using ionization signals in XENON100**
[Phys. Rev. D **94**, 092001 (2016)]

E. Aprile, J. Aalbers, F. Agostini, M. Alfonsi, F. D. Amaro, M. Anthony, F. Arneodo, P. Barrow, L. Baudis, B. Bauermeister, M. L. Benabderrahmane, T. Berger, P. A. Breur, A. Brown, E. Brown, S. Bruenner, G. Bruno, R. Budnik, A. Buss, L. Büttikofer, J. M. R. Cardoso, M. Cervantes, D. Cichon, D. Coderre, A. P. Colijn, J. Conrad, J. P. Cussonneau, M. P. Decowski, P. de Perio, P. Di Gangi, A. Di Giovanni, E. Duchovni, A. D. Ferella, A. Fieguth, D. Franco, W. Fulgione, M. Galloway, M. Garbini, C. Geis, L. W. Goetzke, Z. Greene, C. Grignon, E. Gross, C. Hasterok, E. Hogenbirk, R. Itay, B. Kaminsky, G. Kessler, A. Kish, H. Landsman, R. F. Lang, L. Levinson, M. Le Calloch, C. Levy, F. Linde, S. Lindemann, M. Lindner, J. A. M. Lopes, A. Lyashenko, A. Manfredini, T. Marrodán Undagoitia, J. Masbou, F. V. Massoli, D. Masson, D. Mayani, A. J. Melgarejo Fernandez, Y. Meng, M. Messina, K. Micheneau, B. Miguez, A. Molinario, M. Murra, J. Naganoma, U. Oberlack, S. E. A. Orrigo, P. Pakarha, B. Pelssers, R. Persiani, F. Piastra, J. Pienaar, G. Plante, N. Priel, L. Rauch, S. Reichard, C. Reuter, A. Rizzo, S. Rosendahl, N. Rupp, J. M. F. dos Santos, G. Sartorelli, M. Scheibelhut, S. Schindler, J. Schreiner, M. Schumann, L. Scotto Lavina, M. Selvi, P. Shagin, H. Simgen, A. Stein, D. Thers, A. Tiseni, G. Trincherro, C. D. Tunnell, M. von Sivers, R. Wall, H. Wang, M. Weber, Y. Wei, C. Weinheimer, J. Wulf, and Y. Zhang (XENON Collaboration)

(Received 24 February 2017; published 15 March 2017)

DOI: [10.1103/PhysRevD.95.059901](https://doi.org/10.1103/PhysRevD.95.059901)

In Fig. 5 of our original article, we compared measurements and predictions of the charge yield Q_y . In that figure, the LUX points were misrepresented, and therefore we present here in Fig. 1 the corrected points from Ref. [1].

This has no impact on the presented results or conclusions.

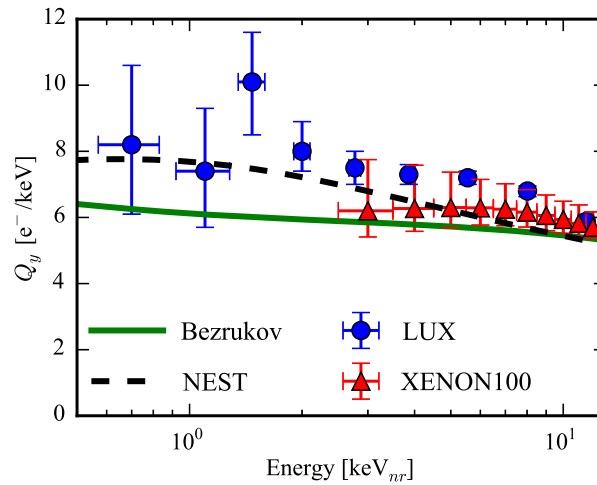


FIG. 5. Charge yield (Q_y) as a function of energy for nuclear recoils (keV). This analysis employs the conservative nuclear recoil charge yield model of Bezrukov *et al.* (electric field independent) [2], given by the green line. It agrees with the measurement of XENON100 ($E = 0.53$ kV/cm) [3] (red triangles). The NEST model ($E = 0.73$ kV/cm) [4] (dashed black) and the recent measurement of LUX ($E = 0.18$ kV/cm) [1] (blue points) predict slightly higher yields. To account for the mild discrepancies below 3 keV, we use the model from Bezrukov *et al.* and conservatively assume $Q_y = 0$ below 0.7 keV.

- [1] D. S. Akerib *et al.* (LUX Collaboration), [arXiv:1608.05381](https://arxiv.org/abs/1608.05381).
- [2] F. Bezrukov, F. Kahlhoefer, and M. Lindner, *Astropart. Phys.* **35**, 119 (2011).
- [3] E. Aprile *et al.* (XENON100 Collaboration), *Phys. Rev. D* **88**, 012006 (2013).
- [4] B. Lenardo, K. Kazkaz, A. Manalaysay, J. Mock, M. Szydagis, and M. Tripathi, *IEEE Trans. Nucl. Sci.* **62**, 3387 (2015).